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A GROUP TEST FOR MEASURING READING VOCABULARY IN THE FIRST GRADE

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I. PURPOSE OF THE TEST

The development of the test to be described in the present brief paper has been part of a larger study aiming at the development of a series of group tests, of both intelligence and achievement, for use in the first three grades. Throughout the course of this work, tests for use in the first grade have been felt to be particularly important. In the first grade the very beginnings of the process of learning in school can be studied; from a pedagogical point of view, then, measurement of the educational process in the first grade would seem a matter of the greatest interest. Adjustment to differences in ability—by division of classes into sections, or otherwise—is also particularly easy, and acceleration may very well begin here; hence, measurement of the educational status of children in the first grade seems decidedly worth while for practical educational purposes. It is also obvious that tests for use in the first grade would be of distinct service from a supervisory point of view and would aid in giving definition to the work in a grade where definite requirements are sometimes seriously lacking.

Effort at the formulation of tests for use in the first year of school seemed, in short, distinctly worth while. Interest was added to the project by the unique situation, so far as measurement of fundamental educational products is concerned, presented by the course of study common in the first grade. The usual subjects are reading, writing, drawing, and music. The writers were interested primarily in factors conditioning a child's progress in school; they were interested in critical or "promotion" subjects. Neither drawing nor music could be thus considered; nor, in actual practice, can writing be so considered. In practice, a child is never actually retarded *merely* because he cannot write; it is more common to promote children on trial if their writing is poor but their reading

good. The one critical subject is reading. The problem of educational measurement in the first grade is thus essentially very simple. With such a key subject—of a very definite and concrete nature, as is reading in the first grade—data should be both readily obtainable and of exceptional value.

A special effort has therefore been made to develop a convenient and reliable test for measuring progress in reading which could be used in the first year of school. While the resulting scales have their obvious limitations, the writers have found them of distinct usefulness. It is hoped that the tests will at least stimulate further work along this general line; there has thus far been all too little study of the problem of measurement in the primary grades.

II. THE TESTS AND THEIR DEVELOPMENT

The work began with the use of Haggerty's visual vocabulary test, as an aid in supervision of teaching in the first grade.¹ The test is given individually and requires about five minutes per child. It consists simply of a carefully selected and graded list of words printed on a piece of cardboard, which the child is asked to read. The score is determined from the distance down the list which the child is able to go. The test was given every two weeks throughout a school year—alternating forms, of course—to a class of first-grade children, and was found to give information of distinct helpfulness to the teacher.

It was felt, however, that the test was unnecessarily time-consuming, not perhaps as standard in its procedure as it might be, and altogether impossible of such extended application in educational surveys and in supervision as the writers desired. An effort was therefore made to put the same problem in group-test form. A number of methods were tried. The device was finally hit upon of using simple words and nonsense syllables, asking the children to find the "real words" and indicate them by drawing lines around them. A trial form was made up and mimeographed, consisting of such lines as

pl on re tu os

¹ M. E. Haggerty, "Scales for Reading Vocabulary of Primary Children," *Elementary School Journal*, XVII (October, 1916), 106-15.

The children were to find the one real word in each line, and mark it by drawing a line around it.

The test was found to go excellently. Accordingly, two forms containing a total of fifty items were made up and given to all the first-grade children in School A, a total of 148 cases. These results were then tabulated by item, the P. E. values found, and two duplicate scales, each containing twenty-two lines, made up on this basis. The first five lines of Form A are as follows:

tl	mz	the	unf	pr
wx	I	sn	en	w
ol	bux	ts	lz	go
see	elx	bim	ts	osn
bul	og	he	bu	ln

The problem of the test is carefully developed through the first five lines which are used as examples; following these are the twenty-two lines of the test proper. The directions for Form A are to be given orally as follows:

Look at the first line! Who can see a real word in that line? What is the word? Yes, "the." What part of the line is it in? Yes, right in the middle. I want you to draw a line around the word "the" because it is the only *real* word in the line. The other groups of letters don't make words. Draw a line around "the."

Look at the next line! What is the real word? Yes, "I." Draw a line around "I" because it is the only real word in the line.

Look at the next line. What is the real word? Yes, "go." Draw a line around "go."

Look at the next line! What is the real word? Yes, "see." Draw a line around "see."

Look at the next line! What is the real word? Yes, "he." Draw a line around "he."

Now, everyone attention! I want you to read over the rest of the lines on the page in the same way. In each line there is *just one real* word. You find the real word in each line, and then draw a line around it.

The children are allowed exactly three minutes after the directions are given for work on the test. In scoring, count only the lines in which the correct word, and nothing more, is marked; the score is simply this total of items correct. It should be added that *any* indication of the correct word—line around, line under, cross—is considered satisfactory; the child is not required to follow

directions exactly, but only to show in some unmistakable way that he knows the word in question.

III. FIRST NORMS AND VALIDATION

The two final forms were next given to the first-grade children in the two remaining schools of the city.¹ In one school Form A was given first, followed immediately by Form B; while in the other school the order of giving was reversed. It was hoped that in this way the influence of fatigue and practice might be evenly distributed. A total of 187 children in the I B and I A grades were tested. The tentative norms thus obtained are presented in Table I.

The results obtained from the two forms were next correlated with each other in order to obtain some indications as to the reliability or consistency of the measures yielded. The coefficient was found to be .86, a result which, everything considered, is surprisingly high, and which indicates that a very considerable degree of confidence can be placed in these tests as measures of the type of ability called for.

However, it remains to be proved that such ability is closely related to ability to read. Data with regard to this last question—as to the “validity” of the scale—were obtained by examining the children in one of the schools individually, with exactly the same words, and in the same order, as the words used in Form A. That is, the children were given the Haggerty test.² This individual examination was given a day or two after the group test and before the examiner knew of the results with the group form. The children were interviewed one at a time, and a painstaking attempt was made to determine just how many of the words used in the group test each child *really knew*. The results obtained from these individual examinations were then correlated with the

¹ The writers wish to express their obligations to the principals and teachers of these two schools, for their interest and help, and to Superintendent E. E. Ramsey of the Bloomington schools, without whose co-operation the entire study would, of course, have been impossible.

² It should be mentioned that the words used by the writers were taken from Haggerty's lists, and so were already graded and selected as words satisfactory for work with first-grade children. Hence the small amount of preliminary experimentation needed in order to obtain satisfactorily graded group forms.

records made on the group test. The correlation was found to be .83. If, therefore, Haggerty's test is a test of reading vocabulary, then the writers' scales would appear to be also measures of this aspect of reading ability.

IV. THE USEFULNESS OF SUCH SCALES

It may be argued that the Haggerty scales are *not* satisfactory measures of progress in reading, that such emphasis upon the individual word is unfortunate, and that understanding of the

TABLE I

	Grade I B	Grade I A	Grades I A and I B
Form A			
Median.....	4.0	10.0	5.4
75 percentile.....	9.2	17.0	12.0
25 percentile.....	1.0	3.5	1.7
Form B			
Median.....	3.9	9.8	5.1
75 percentile.....	8.9	16.7	11.9
25 percentile.....	1.0	3.4	1.6

entire sentence should rather be stressed. One's feeling in the matter will depend, of course, upon one's theory as to the way in which ability to read develops. And the usefulness of such vocabulary tests will be dependent, somewhat, in a given school or school system, upon the methods employed in teaching reading. It seems to the writers that, in the first grade, measurement of the reading vocabulary is measurement of the most important element in learning to read. They feel that in any case investigation of the reading vocabulary is well worth while.¹

If such investigation *is* worth while, then it may be carried out by means of these scales in the merest fraction—about one-

¹ It should be added that a sentence-reading test was tried. It consisted of a series of sentences such as "See dog my pretty book"; each sentence had one irrelevant word, which the children were to find and cross out. But the test was found to be too difficult; almost every sentence contained some words which the children did not know.

Mention should also be made of the fact that a test similar to that described in the present paper, but more difficult, has been tried in the second grade, and results correlated with very careful estimates by the teachers as to reading ability. The correlation between test score and estimated ability was found to be .71 (156 cases). The teachers were probably estimating oral reading, rather than real "reading with understanding." But the correlation surely contributes to the justification of the test as a reading test.

fifteenth—of the time required for individual testing and with less embarrassment to the children and more standard procedure. Measurement of the progress of a given class through the year and comparison of classes and schools in a given system would seem particularly interesting. For investigation of the first topic more forms than the writers have developed might be needed. But it is no small merit of the test that an indefinite number of other forms can be readily made up, and that the material can easily be mimeographed. The writers have throughout aimed at a trial of methods rather than at the development of a few special blanks for use in such work; and they should be much interested to have others make trial of the general idea of the test, with forms specifically adapted for use in their own school systems. To the writers, in fact, certain still more general features of the work have seemed most important. They believe the tests to have demonstrated, with some definiteness, the possibility of measurement of educational products by means of *group* tests in the first grade, and even as early as the third month of school. And they feel that there is a special need and opportunity for development of group tests for use with primary children.[†]

SUMMARY

1. The paper describes an effort to develop a group test for measuring reading vocabulary for use in the first grade.
2. A simple group test for this purpose is presented. It takes five minutes to give; the blanks can be scored as rapidly as four a minute. A duplicate form is also presented.
3. The scale is shown to have a high reliability, and to correlate very highly with the results of individual tests of vocabulary. It is concluded that the scale may be considered to give a distinctly satisfactory measure of reading vocabulary in the first grade.
4. It is also concluded that group tests for use in the first grade are entirely feasible, and that the development of group tests for use with primary children is much to be desired.

[†] Since the writing of the present paper the tests have been printed on a special form, using large primer type and thoroughly restandardized. These standard forms are issued by the Department of Psychology, Indiana University, and may be obtained through the writers.